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ABSTRACT

The purpose of these studies was to develop and test versions of a psychosocial theoretical model that would have implications for the development of adolescent alcohol misuse prevention strategies. In the first study which was part of a test of a school-based refusal skills prevention program, the theoretical model consisted of the latent variables of age of the child, exposure to peer use and misuse of alcohol, susceptibility to peer pressure, self-esteem, internal health locus of control, and the adolescent's use and misuse of alcohol. Subjects (N=4,157) were grade five and six students. In a second cross-sectional study based on students (N=1,340) in grades 6 through 12, an extension of the theoretical model was tested which added variables of image of self as deviant, exposure to peer misuse of alcohol, family cohesiveness, parental alcohol use and attitudes toward alcohol use, parental alcohol misuse and attitudes toward alcohol misuse, sibling alcohol use and attitudes toward alcohol use, and sibling alcohol misuse and attitudes toward alcohol misuse. Implications of the findings regarding susceptibility to peer pressure, alcohol experimentation, parental nurturance and parental use/norms, and development of alcohol misuse programs are discussed. Two tables and five figures are attached. (ABL)

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Peer, Family, and Intrapersonal Predictors of Adolescent Alcohol Use and Misuse*

T.E. Dielman, Ph.D., J.T. Shope, Ph.D., and A.T. Butchart, B.A.

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Peer, Family, and Intrapersonal Predictors

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The University of Michigan

The purpose of the studies to be reported was to develop and test versions of a psychosocial theoretical model that would have implications for the development of adolescent alcohol misuse prevention strategies. Two studies will be discussed.

Study One. In the first study, which was a part of a test of a school-based refusal skills prevention program, the theoretical model consisted of the latent variables of age of the child, exposure to peer use and misuse of alcohol, susceptibility to peer pressure, self-esteem, internal health locus of control, and the adolescent's use and misuse of alcohol. The measures defining the latent variables are shown in Table 1 and the model is shown in Figure 1.

Insert Table 1 and Figure 1 here

The subjects for the model test were 4,157 grade 5 and 6 students. This model is based on the first posttest data, and its purpose was to test the short-term effects of the intervention on adolescent alcohol misuse and the fit of the model to the observed data. The overall fit of the hypothesized model was quite good, as indicated by the CN value of 352. It will be noted that the direct effect of the intervention on adolescent alcohol misuse, although statistically significant, was small (-.04). The full model accounted for 45% of the true score variance in adolescent alcohol misuse, and 38% was directly attributable to the adolescents' scores on susceptibility to peer pressure. An additional six percent of the true score variance was accounted for by the target adolescents' exposure to peer use and misuse of alcohol. These results are available in published form (Dielman, et al., 1989a).

In a longitudinal analysis of data based on 1,505 of these subjects who were in grades 5 and 6 at the first testing occasion and grades 7 and 8 at the final testing occasion, the same model, using Time 1 scores as predictors and the final occasion scores as the criterion, accounted for 27% of the true score variance. Susceptibility to peer pressure alone accounted for 23% of the true score variance in alcohol misuse, and exposure to peer use and misuse of alcohol accounted for and additional 2%. Again, the fit was good, with a CN of 296. The results of the longitudinal analysis have not yet been published.

Insert Table 2 and Figure 2 here

Study Two. In a second cross-sectional study (also unpublished to date), based on 1,340 students in grades 6 through 12, an extension of the theoretical model was tested. The extension included the additional latent variables summarized in Table 2. The hypothesized extended model is shown in Figure 2. The latent variables added to this model, in addition to those included in study one, were: image of self as deviant, exposure to peer misuse of alcohol, family cohesiveness, parental alcohol use and attitudes toward alcohol use, parental alcohol misuse and attitudes toward alcohol misuse, sibling alcohol use and attitudes toward alcohol use, and sibling alcohol misuse and attitudes toward alcohol misuse. The adolescents' alcohol use and misuse have been considered as separate latent variables in this model. The new structural relationships hypothesized in this model were: image of self as deviant was hypothesized to be positively related to exposure to both use and misuse of alcohol by peers. Alcohol use and misuse by peers were hypothesized to be positively related to, respectively, adolescent alcohol use and misuse. Family cohesiveness was hypothesized to be negatively related to adolescent susceptibility to peer pressure and image of self as deviant, and positively related to adolescent self-esteem. Self-esteem was hypothesized to be negatively related to both use and misuse of alcohol by the adolescent. Parental alcohol use and (positive) attitudes toward alcohol use were hypothesized to be positively related to adolescent alcohol use and the siblings' alcohol use/positive attitudes toward alcohol use.

Parental alcohol misuse was hypothesized to be positively related to adolescent image of self as deviant and alcohol misuse, and to the siblings' alcohol misuse/positive attitudes toward alcohol misuse. Sibling alcohol use and approval of alcohol use was hypothesized to be positively related to sibling alcohol misuse/approval of alcohol misuse and to adolescent alcohol use. Sibling alcohol misuse/approval of alcohol misuse was hypothesized to be positively related to adolescent alcohol misuse. All other relationships were as those hypothesized in the study one model.

Insert Figure 3 here

After a series of preliminary analyses and iterations of structural equation analyses, the final reduced model shown in Figure 3 was accepted as one including all of the important predictors from the hypothesized model. The overall fit was good (CN=278), the true score variance accounted for in alcohol use was 85%, and the true score variance accounted for in alcohol misuse was 78%. The direct effect of susceptibility to peer pressure accounted for 19% of the true score variance in alcohol use and 18% in alcohol misuse. The direct effect of peer use and approval of alcohol accounted for an additional 16% of the true score variance in alcohol use and 21% in alcohol misuse. The indirect effect on alcohol use of susceptibility to peer pressure, through its association with peer use and approval of alcohol, was .20; the comparable value in the prediction of alcohol misuse was .23. The indirect effects of grade in school, through its association with peer use and approval of alcohol, were also .20 and .23, respectively, in the prediction of alcohol use and misuse. The indirect effects of grade in school through its association with susceptibility to peer pressure, were .14 for alcohol use and .13 for alcohol misuse. Grade in school exercised additional indirect effects through the paths from grade through susceptibility to peer pressure through peer use and approval of alcohol. These effects were .06 for alcohol use and .07 for alcohol misuse. The indirect effects of parental nurturance through susceptibility to peer pressure were -.14 for alcohol use and -.13 for alcohol misuse. The path from parental nurturance through susceptibility to peer pressure through peer use and approval of alcohol resulted in indirect effects

of -.06 for alcohol use and -.07 for alcohol misuse. The direct effect of parents' approval of their children's alcohol use accounted for only 2% of the variance in alcohol use and none in alcohol misuse, but the indirect effect of parental approval of alcohol use, through its association with susceptibility to peer pressure was .09 for both alcohol use and misuse. The path from parental approval through susceptibility through peer use and approval accounted for and additional 4% of the true score variance in alcohol use 5% in alcohol misuse. The parents' alcohol use had no direct effect on the adolescents' alcohol use or misuse, but through its association with susceptibility to peer pressure, parental alcohol use had indirect effects of .06 on alcohol use and .05 on alcohol misuse. The pathway from parental alcohol use through susceptibility through peer use and approval of alcohol resulted in indirect effects of .03 for both alcohol use and misuse. All other direct and indirect effects shown in Figure 3 accounted for no more than two percent (rounded) of the true score variance in adolescent alcohol use or misuse.

Implications for Prevention Programs. If one were to stop with the overall test of the model shown in Figure 1, the reasonable conclusions would be that: 1) exposure to peer use and misuse of alcohol, together with susceptibility to peer pressure, account for a sizable portion of the variance in adolescent alcohol misuse, and 2) the intervention did not have the desired effect on either one of them. There is more to the story, however. In a 1986 article, Goodstadt chastised prevention researchers and practitioners for designing prevention programs and the evaluations thereof as if all of the target participants were equal with respect to prior experience with the substance of interest. When the students in study one were grouped according to their prior experience with alcohol (abstainers, supervised experience only, and unsupervised experience), the results shown in Figure 4 emerged. These results have been published (Dielman, et al., 1989b).

Insert Figure 4 here

As is evident from inspection of Figure 4, the intervention did significantly reduce the rate of onset of alcohol misuse among the subgroup of adolescents who had prior unsupervised

experience with alcohol. There was no treatment by occasion interaction for the other two groups and, as the other two groups comprised about five-sixths of the total sample, the treatment by occasion interaction based on the total sample analysis was not statistically significant. The same results are true of the intervention effect on susceptibility to peer pressure, as shown in Figure 5 (not published as yet).

Insert Figure 5 here

The implications/for prevention research and practice, given these findings, are that: 1) susceptibility to peer pressure and exposure to peer alcohol use/misuse are important predictors of adolescent alcohol misuse; 2) susceptibility to peer pressure and the rate of onset of adolescent alcohol misuse can be decreased by a school-based refusal skills approach with elementary school students who have begun to experiment with alcohol in unsupervised settings; 3) students who have not begun to experiment with alcohol in unsupervised settings by grade 6 and not very likely to do so at least through grade 8, and 4) it is necessary to follow the students for longer than an immediate posttest to detect differences between the treatment and control groups.

The implications for prevention research from the results of the analyses conducted in study two are that: 1) susceptibility to peer pressure and exposure to peers who use alcohol and approve of alcohol use remained as important predictors of adolescent alcohol use; 2) parental nurturance and parental alcohol use/norms regarding alcohol use play important roles in the prediction of adolescent alcohol misuse, although secondary to the peer variables, and 3) the development of alcohol misuse prevention programs incorporating a parental component is suggested. It is the authors' opinion that the test of revised models including additional parental concepts (e.g., explicit norm setting regarding alcohol use, monitoring of behavior regarding norms, and consistent enforcement of norms) are advisable prior to developing the parental component.

REFERENCES.

Dielman, T.E., Campanelli, P.C., Shope, J.T. and Butchart, A.T. (1989). A covariance structure model test of antecedents of adolescent alcohol misuse and a prevention effort. Journal of Drug Education., 19(4), 337-361. (a)

Dielman, T.E., Shope, J.T. and Butchart, A.T. (1989). Differential effectiveness of an elementary school-based alcohol misuse prevention program by type of prior drinking experience. Journal of School Health., 59(6), 255-263. (b)

Goodstadt, M. (1986). School-based drug education in North America: What is wrong? What can be done? Journal of School Health, 56, 278-281.

Table 1.
Description of Variables and Indices: Study 1

Item	Range	Mean	SD	Lambdas
Age (Grade Level)	7=Seventh grade, 8=Eighth grade	7.49	0.50	NA
Intervention: Acquisition of Social Skills to Resist Pressure	0=Control, 1=Intervention	0.68	0.47	NA
Exposure to Peer Use and Misuse of Alcohol (Alpha=.66)				
How many of your friends drink alcohol at home with their families?	0=None. . .3=All	0.75	0.77	0.78
How many of your friends drink alcohol when they are out with their friends?	0=None. . .3=All	0.88	0.90	0.29
How many of your friends have ever been in trouble because of drinking alcohol?	0=None. . .3=All	0.53	0.73	0.65
Alcohol Misuse: Overindulgence (Alpha=.72)				
How many times did you drink more than you planned to?	0=Never. . .3=Three or more times	0.32	0.75	0.34
How many times did you feel sick to your stomach after drinking?	0=Never. . .3=Three or more times	0.22	0.58	0.67
How many times did you get very drunk?	0=Never. . .3=Three or more times	0.34	1.09	0.43
Susceptibility to Peer Pressure (Alpha=.85)				
If a friend offers you a drink of alcohol would you drink it?	0=No. . .3=Yes	0.55	0.86	0.22
If a friend offers you a drink of alcohol would you want to try it?	0=No. . .3=Yes	0.78	0.97	0.29
If you are at a party where your friends are drinking alcohol, would you feel left out if you are not drinking alcohol?	0=No. . .3=Yes	0.65	0.94	0.65
If a friend dares you to smoke a cigarette and your parents don't want you to smoke, would you smoke it?	0=No. . .3=Yes	0.47	0.87	0.52
If your friends are going to the movies and you have to study for a test, would you go to the movies anyway?	0=No. . .3=Yes	1.17	1.11	0.76
If your best friend is skipping school, would you skip too?	0=No. . .3=Yes	0.38	0.74	0.65

Table 1 (continued)

Item	Range	Mean	SD	Lambdas
Self-Esteem (Alpha=.55)				
Are you happy at school?	0=No. . .1=Yes	0.78	0.42	0.53
Do you like the teacher to call on you?	0=No. . .1=Yes	0.53	0.50	0.84
Are your proud of your school work?	0=No. . .1=Yes	0.77	0.42	0.67
Does your teacher make you feel bad?	0=No. . .1=Yes	0.17	0.38	0.89
Health Locus of Control (Alpha=.64)				
Do you believe that you can do many things to fight illness?	0=No. . .1=Yes	0.86	0.34	0.67
Do you believe that when you are sick you can do things to get better?	0=No. . .1=Yes	0.88	0.33	0.80
Do you believe that you can do things to keep from getting sick?	0=No. . .1=Yes	0.88	0.33	0.80
Do you believe that there are many things you can do to prevent accidents?	0=No. . .1=Yes	0.85	0.34	0.78
Do you believe that you can make many choices about your health?	0=No. . .1=Yes	0.88	0.32	0.77
Do you believe that there are things you can do to have healthy teeth?	0=No. . .1=Yes	0.94	0.24	0.79

Figure 1

Study 1: Maximum Likelihood Estimates for the Total Sample
(N = 4,157) (standardized parameters)

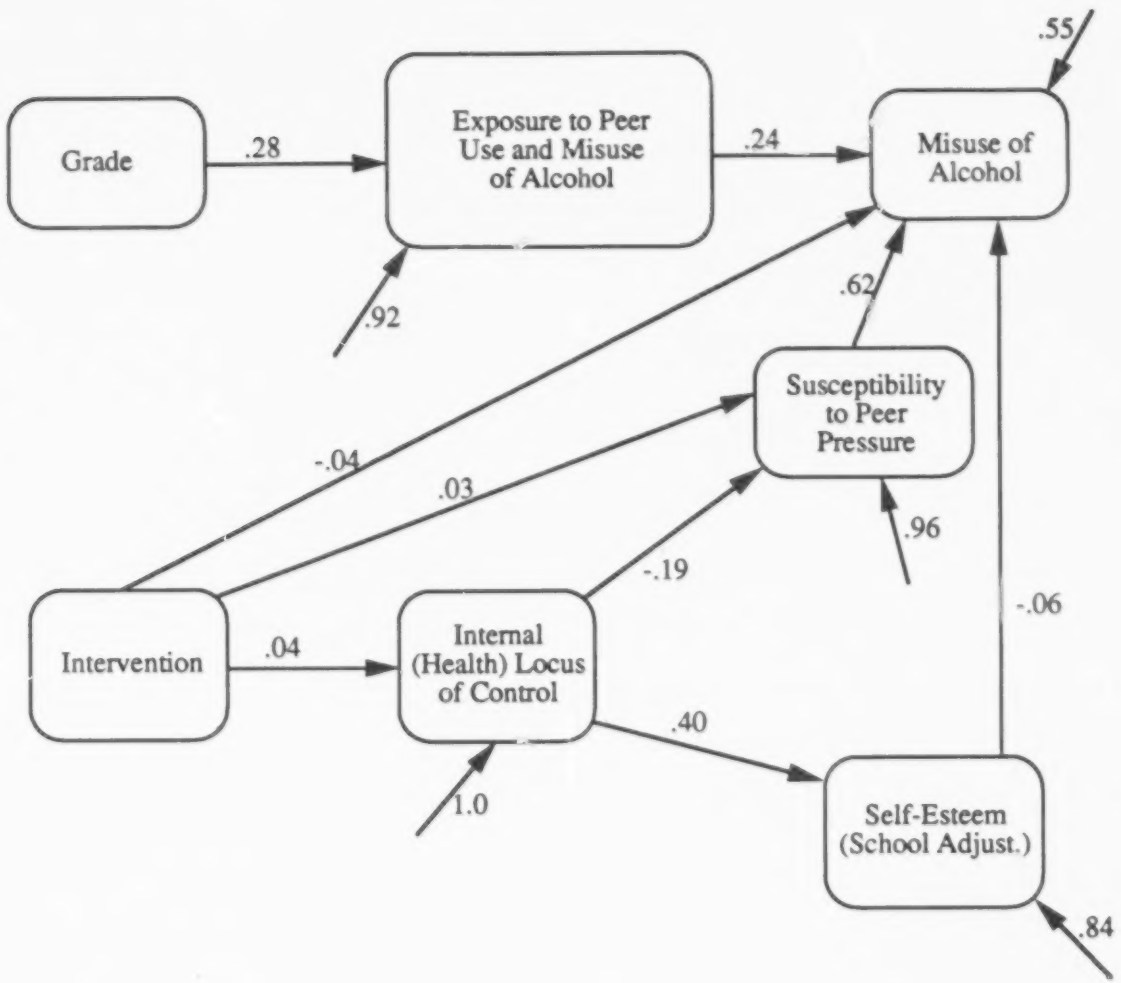


Table 2.

Description of Variables and Indices: Study 2

Index	Mean	SD	Range	Lambdas	Alpha
Parents' Alcohol Use	7.16	4.36	0-20		.72
How often does your father have a drink of alcohol?	2.20	1.67	0-5	.51	
When your father drinks alcohol, how much does he usually drink?	2.11	1.40	0-5	.42	
How often does your mother have a drink of alcohol?	1.42	1.36	0-5	.86	
When your mother drinks alcohol, how much does she usually drink?	1.52	1.20	0-5	.79	
Parents' Approval of Kids' Alcohol Use	1.76	2.15	0-8		.74
Do your parents allow you to drink alcohol at parties when they are present?	.64	.93	0-2	.46	
Do your parents allow you to drink alcohol at parties when they are not present?	.21	.62	0-2	.53	
How do your parents feel about kids your age drinking beer, wine, or hard liquor?	.54	.68	0-2	.86	
How do your parents feel about kids your age getting drunk?	1.34	.56	0-2	.80	
Grade in school	9.04	2.20	6-12	1.0	NA
(obtained from school records)					

Table 2 (continued)

Index	Mean	SD	Range	Lambdas	Alpha
Nurturance	18.96	7.17	0-30		.89
How often do you share thoughts or feelings with your parents?	1.67	.93	0-3	.67	
How often do you spend time with your parents?	2.14	.79	0-3	.64	
When you do something well, how often do your parents give you praise or encouragement for what you do?	2.35	.81	0-3	.64	
How often do your parents give you a hug, kiss, or a pat on the shoulder?	2.07	.97	0-3	.70	
How often do you and your parents do things together that you all enjoy--things like playing sports or games, going somewhere together, or working on things together?	1.78	.90	0-3	.66	
How often do your parents enjoy talking things over with you?	1.92	.93	0-3	.73	
How often do your parents cheer you up when you're sad?	1.75	.96	0-3	.73	
How much do you rely on your parents for advice and guidance?	1.85	.84	0-3	.64	
Who do you usually go to for help when you have a problem?	1.52	1.50	0-3	.63	
In general, are you more comfortable with your family or your friends?	1.92	1.44	0-3	.71	

Table 2 (continued)

Index	Mean	SD	Range	Lambdas	Alpha
Internal Health Locus of Control	5.46	1.03	0-6		.64
Do you believe that you can do things to keep from getting sick?	.88	.33	0-1	.40	
Do you believe that when you are sick, you can do things to get better?	.88	.33	0-1	.44	
Do you believe that you can do many things to fight illness?	.91	.29	0-1	.50	
Do you believe that you can make choices about your health?	.93	.26	0-1	.49	
Do you believe that there are things you can do to have healthy teeth?	.96	.21	0-1	.60	
Do you believe that there are many things you can do to prevent accidents?	.92	.27	0-1	.54	
Susceptibility to Peer Pressure	8.55	5.22	0-21		.79
If a friend dares you to tear a page out of a school library book, would you do it?	.95	1.01	0-3	.50	
If you are at a party where your friends are drinking alcohol, would you feel left out if you are not drinking alcohol?	.92	1.04	0-3	.38	
If your best friend is skipping school, would you skip too?	1.10	1.02	0-3	.58	
If a friend offers you a drink of alcohol would you drink it?	1.35	1.11	0-3	.93	

Table 2 (continued)

Index	Mean	SD	Range	Lambdas	Alpha
If a friend offers you a drink of alcohol,would you want to try it?	1.52	1.13	0-3	.88	
If your friends are going to the movies and you have to study for a test, would you go to the movies anyway?	1.81	1.07	0-3	.36	
If a friend dares you to smoke a cigarette and your parents don't want you to smoke, would you smoke it?	.88	1.16	0-3	.57	
Family Adjustment	2.93	1.38	0-4		.78
Do you and your parents have fun together?	.77	.42	0-1	.73	
Are you happy at home?	.81	.39	0-1	.68	
Do you get a lot of attention at home?	.66	.47	0-1	.64	
Do your parents understand you?	.66	.48	0-1	.72	
School Adjustment	1.81	1.01	0-3		.49
Are you proud of your school work?	.70	.46	0-1	.51	
Are you happy at school?	.68	.47	0-1	.58	
Do you like the teacher to call on you?	.42	.49	0-1	.41	
Older Brothers' Alcohol Use	1.91	1.73	0-6		.63
Do any of your older brothers, half-brothers, or stepbrothers drink alcohol at home with your family?	.41	.81	0-2	.58	

Table 2 (continued)	Mean	SD	Range	Lambdas	Alpha
Index					
Do any of your older brothers, half-brothers, or stepbrothers drink alcohol when they are out with their friends?	1.13	.69	0-2	.75	
Have any of your older brothers, half-brothers, or stepbrothers ever been in trouble because of drinking alcohol?	.37	.73	0-2	.55	
Older Sisters' Alcohol Use	1.57	1.47	0-6		.53
Do any of your older sisters, half-sisters, or stepsisters drink alcohol at home with your family?	.34	.75	0-2	.49	
Do any of your older sisters, half-sisters, or stepsisters drink alcohol when they are out with their friends?	1.06	.67	0-2	.76	
Have any of your older sisters, half-sisters, or stepsisters ever been in trouble because of drinking alcohol?	.16	.55	0-2	.45	
Deviant Self-Image	.70	.93	0-4		.47
Are you noisier than others your age?	.30	.46	0-1	.31	
Do you have more problems in school than others your age?	.18	.38	0-1	.40	
Do you get in trouble more than others your age?	.13	.34	0-1	.60	
Do you get in more fights than others your age?	.10	.30	0-1	.51	
Older Brothers' Approval of Kids' Alcohol Use	2.33	1.10	0-4		.91

Table 2 (continued)

Index	Mean	SD	Range	Lambdas	Alpha
How do your older brothers, half-brothers, or step-brothers feel about kids your age drinking beer, wine, or hard liquor?	1.20	.57	0-2	.93	
How do your older brothers, half-brothers, or step-brothers feel about kids your age getting drunk?	1.13	.58	0-2	.89	
Older Sisters' Approval of Kids' Alcohol Use	2.14	1.02	0-4		.90
How do your older sisters, half-sisters, or step-sisters feel about kids your age drinking beer, wine, or hard liquor?	1.12	.57	0-2	.93	
How do your older sisters, half-sisters, or step-sisters feel about kids your age getting drunk?	1.03	.57	0-2	.88	
Friends' Alcohol Use and Approval of Kids' Alcohol Use	13.31	9.15	0-36		.88
How many of your friends drink alcohol at home with their families?	1.68	1.98	0-4	.49	
How many of your friends drink alcohol when they are out with their friends?	1.70	1.41	0-4	.90	
How many of your friends have ever been in trouble because of drinking alcohol?	1.40	1.56	0-4	.69	
How often have your friends talked about trying alcohol?	1.87	1.54	0-4	.63	
How often have your friends talked about how much they drink alcohol?	1.85	1.52	0-4	.80	

Table 2 (continued)

Index	Mean	SD	Range	Lambdas	Alpha
How often have your friends offered you a drink of alcohol?	1.64	1.56	0-4	.85	
How often have your friends "put pressure" on you to drink alcohol?	.38	.80	0-4	.35	
How do your friends feel about kids your age drinking alcohol?	1.50	1.00	0-4	.72	
How do your friends feel about kids your age getting drunk?	1.32	1.09	0-4	.73	
Alcohol Use/Misuse					
Alcohol Use was measured by an index of frequency and quantity that indicates number of drinks of alcohol per week	1.59	1.89	0-6	.79	NA
Alcohol Misuse was measured by collapsing items into "yes" or "no" responses, and then summing the items together to make an index reflecting number of types of instances of misuse.	1.77	2.23	0-10	.79	NA

Figure 2

Hypothesized Model: Study 2

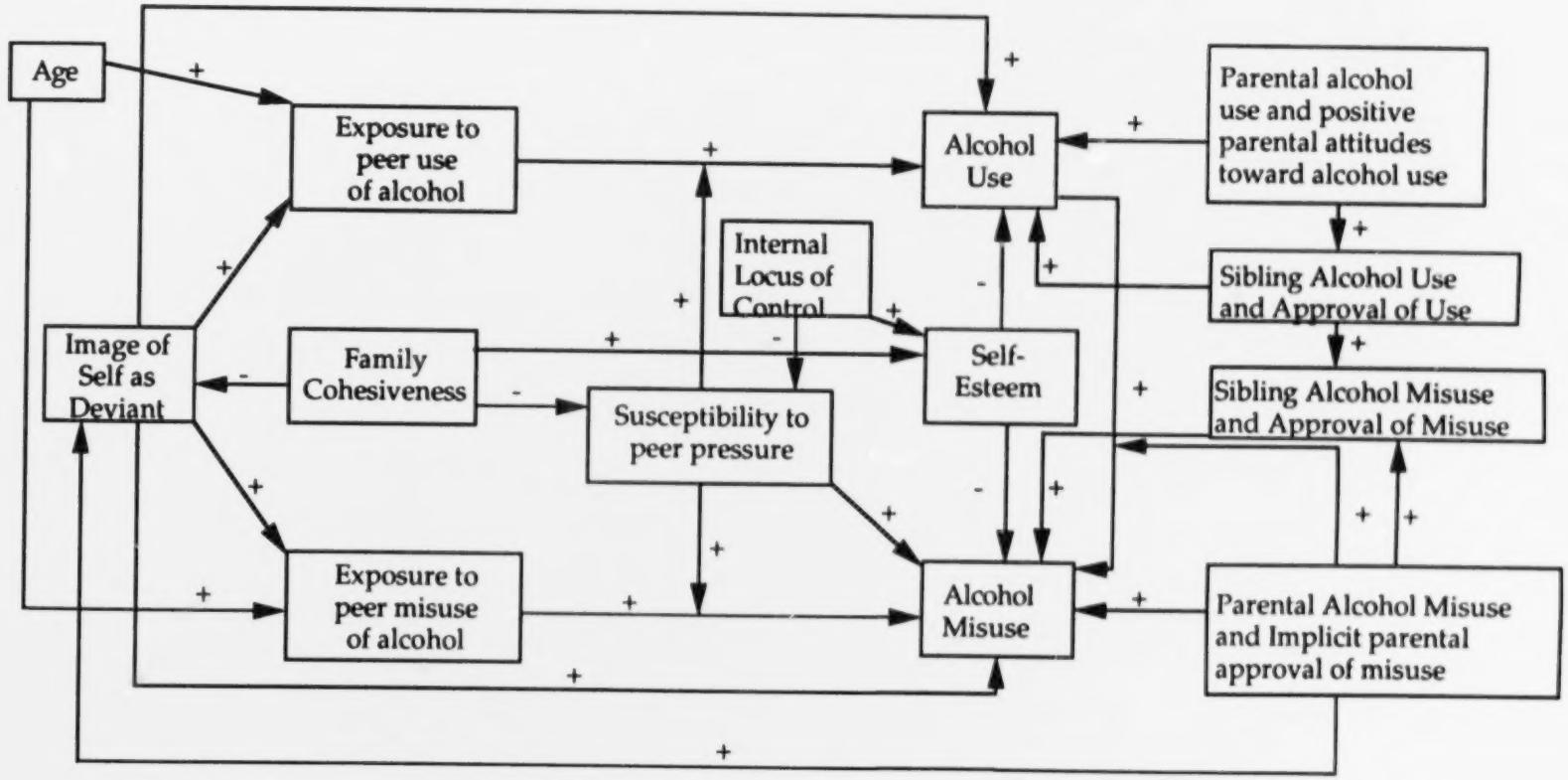
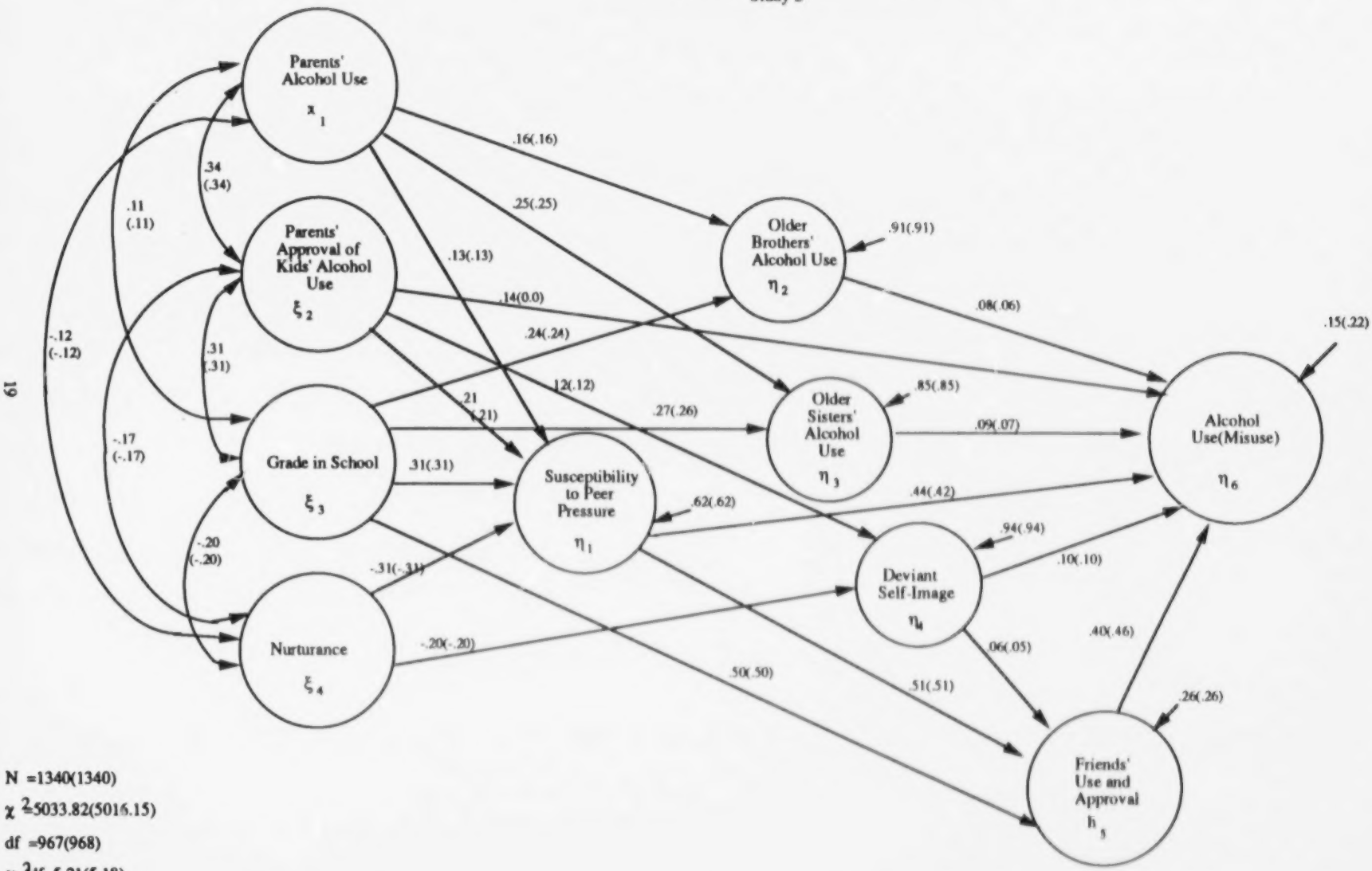

Age
Exposure to peer use of alcohol
Alcohol Use
Parental alcohol use and positive parental attitudes toward alcohol use
Internal Locus of Control
Sibling Alcohol Use and Approval of Use
Image of Self as Deviant
Family Cohesiveness
Self-Esteem
Sibling Alcohol Misuse and Approval of Misuse
Susceptibility to peer pressure
Exposure to peer misuse of alcohol
Alcohol Misuse
Parental Alcohol Misuse and Implicit parental approval of misuse

Figure 3.
Results of Final Iteration of Structural Equation Analysis
Predicting Adolescent Alcohol Use and Misuse
Study 2



N =1340(1340)

χ^2 =5033.82(5016.15)

df =967(968)

χ^2/df=5.21(5.18)

CN =278(279.11)

Percent variance explained in alcohol use(misuse) = 85(78)

Coefficients in parentheses are from the model predicting misuse;
those not in parentheses refer to use.

Figure 4
Treatment by Type of Prior Drinking Experience
by Occasion Interaction
Grade 6 Total Alcohol Misuse Index
Study 1

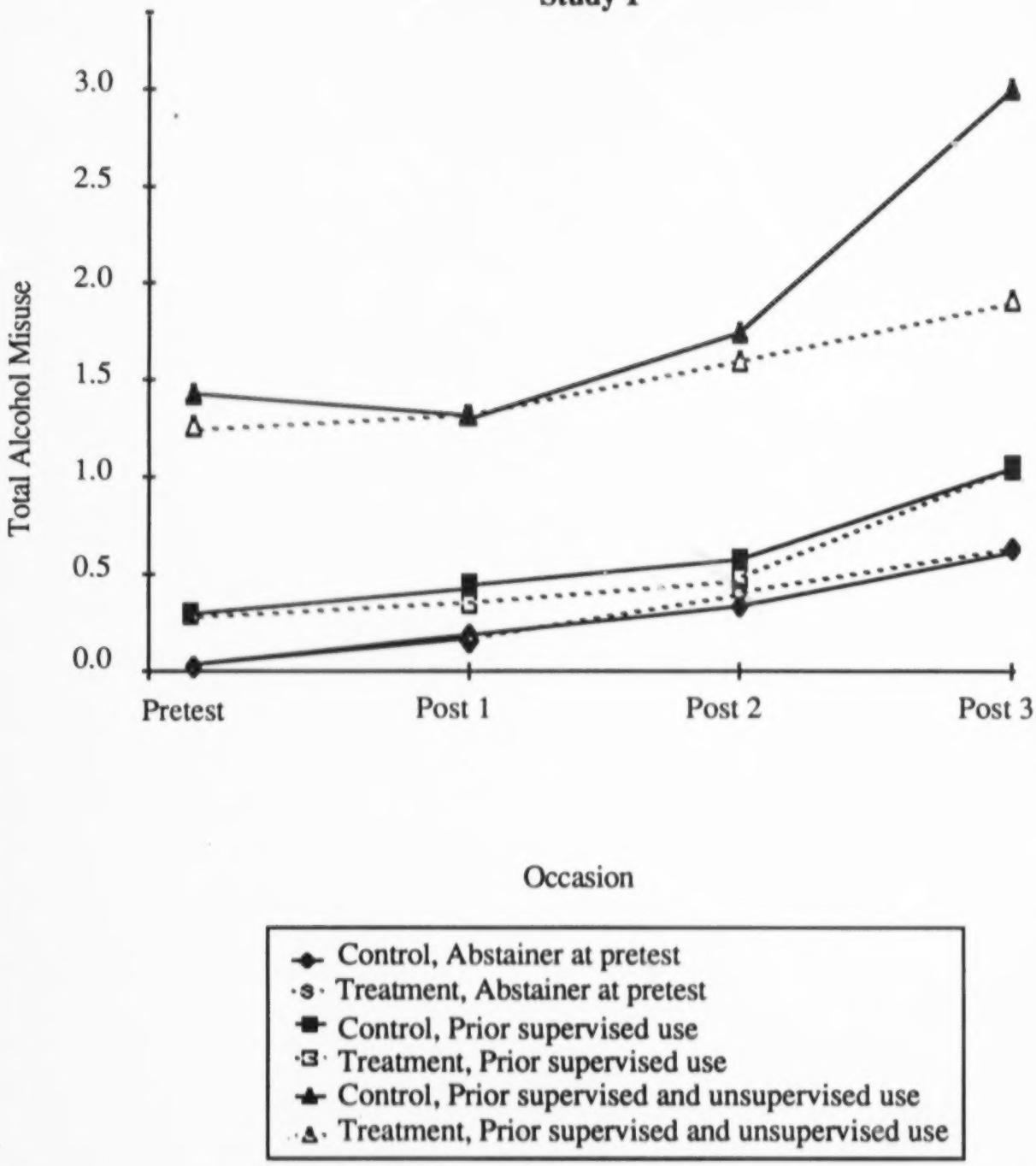
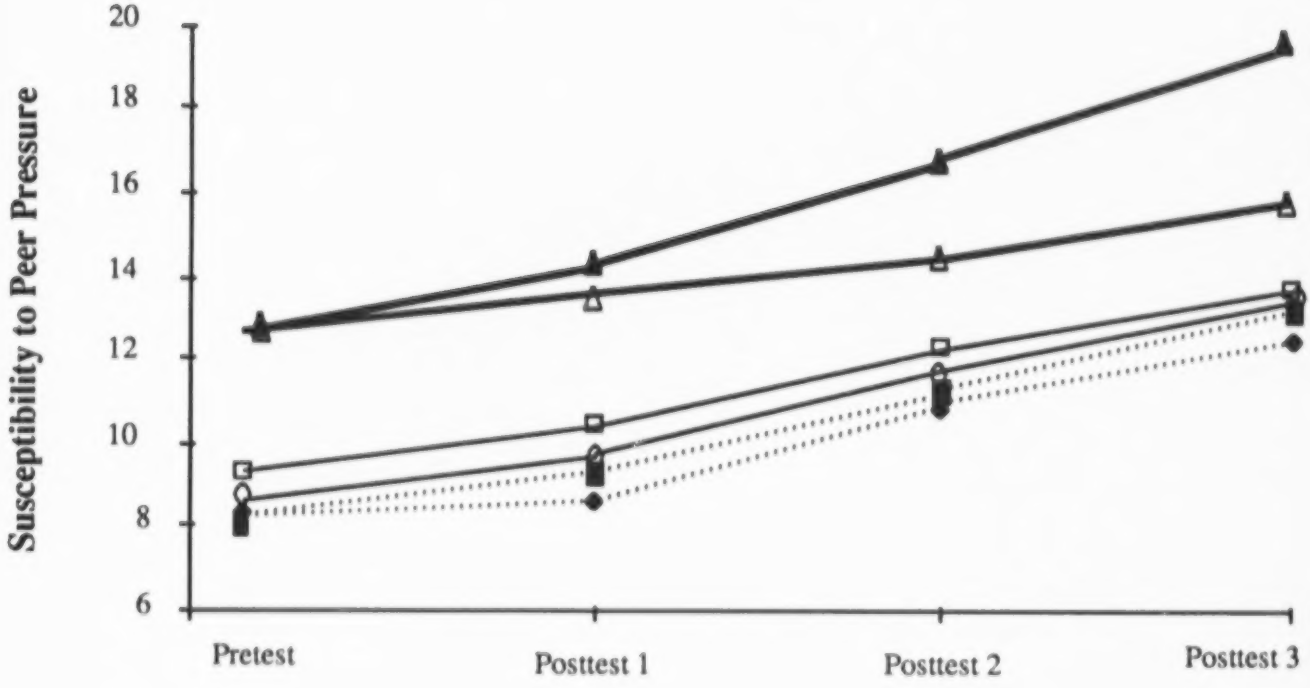


Figure 5
Susceptibilty to Peer Pressure: Grade 6
Treatment by Occasion by Prior Drinking Experience



OCCASION

- Control, Abstainer at pretest
- Treatment, Abstainer at pretest
- Control, Prior supervised use
- Treatment, Prior supervised use
- Control, Prior supervised and unsupervised use
- Treatment, Prior supervised and unsupervised use